Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Previously presented) A process of treating a human cancer patient comprising providing to a cancer cell in said patient a nucleic acid encoding a radiosensitizing polypeptide operatively linked to a constitutive promoter and contacting said cell with ionizing radiation, whereby the nucleic acid is expressed to produce the radiosensitizing polypeptide and the cancer is treated.

2. (Previously presented) The process of claim 1, wherein the nucleic acid encodes a TNF-α.

3. (Previously presented) The process of claim 18, wherein the radioprotecting factor is MnSOD, IL-1 or IL-2.

4-5. (Canceled)

6. (Previously presented) The process of claim 1, wherein the constitutive promoter is the immediate-early CMV enhancer/promoter, the RSV enhancer/promoter, the SV40 early promoter, the SV40 late enhancer/promoter, the MMSV LTR, the SFFV enhancer/promoter, the EBV origin of replication, the β-actin promoter or the Egr enhancer/promoter.

7. (Canceled)

8 . (Previously presented) The process of claim 1, wherein said nucleic acid is provided by transfection by liposomes, adenovirus or HSV-1.

9. (Previously presented) The process of claim 8, wherein the liposome comprises DOTMA, DOTMA/DOPE, or DORIE.

10. (Previously presented) The process of claim 8, wherein the transfection is by adenovirus infection.

11. (Previously presented) The process of claim 8, wherein the

transfection is by HSV-1 infection.

12. (Previously presented) A process of sensitizing a cell to the effects of ionizing radiation comprising transfecting the cell with an adenovirus vector construct comprising a nucleic acid that encodes a cytokine, wherein said cytokine is synthesized in and secreted from said cell.

13. (Previously presented) The process of claim 12, wherein the nucleic acid that encodes the cytokine is positioned under control of a promoter other than an adenovirus promoter.

14. (Previously presented) The process of claim 13, wherein the promoter is the immediate-early CMV enhancer/promoter, the RSV enhancer/promoter, the SV40 early promoter, the SV40 late enhancer/promoter, the MMSV LTR, the SFFV enhancer/promoter, the EBV origin of replication, the β-actin promoter or the Egr enhancer/promoter.

15-17. (Canceled)

18. (Previously presented) A process of radioprotecting a cell from the effects of ionizing radiation comprising:

(a) obtaining a genetic construct comprising a nucleic acid encoding a cell radioprotecting factor operatively linked to a constitutive promoter; and

(b) transfecting a cell with the genetic construct;

whereby said radioprotecting factor is expressed and said cell is protected from said effects.

19. (Previously presented) The process of claim 18, wherein the transfecting is by liposomes, adenovirus, or HSV-1.

20. (Previously presented) The process of claim 19, wherein the liposome comprises DOTMA, DOTMA/DOPE, or DORIE.

21. (Previously presented) The process of claim 19, wherein the transfection is by adenovirus infection.

22. The process of claim 19, wherein the transfection is by HSV-1 infection.

23-25. (Canceled)

26. (Previously presented) A process of radioprotecting a cell from the effects of ionizing radiation comprising transfecting the cell with an adenovirus vector construct comprising a nucleic acid encoding a radioprotecting factor in a mammalian cell.

27. (Previously presented) The process of claim 26, wherein the nucleic acid is positioned under control of a promoter other than an adenovirus promoter.

28. (Previously presented) The process of claim 27, wherein the promoter is the immediate-early CMV enhancer/promoter, the RSV enhancer/promoter, the SV40 early promoter, the SV40 late enhancer/promoter, the MMSV LTR, the SFFVs enhancer/promoter, the EBV origin of replication, the β-actin promoter or the Egr enhancer/promoter.

29. (Previously presented) A pharmaceutical composition comprising a genetic construct comprising a nucleic acid that encodes a TNF-α operatively linked to a constitutive promoter dispersed in a pharmacologically acceptable carrier, wherein the genetic construct is packaged within an adenovirus particle.

30. (Canceled)

31. (Previously presented) A method of expressing a radioprotecting or radiosensitizing factor in a mammal comprising administering to the mammal an effective amount of the pharmaceutical composition of claim 29.

32. (Original) The method of claim 31, wherein the administering is by means of an intravenous injection of from 10^8 to 10^{11} virus particles.

33. (Original) The method of claim 31, wherein the mammal is a mouse.

34. (Original) The method of claim 31, wherein the mammal is a human.

35. (Previously presented) A process of inhibiting growth of a tumor comprising the steps of:

(a) delivering to said tumor a therapeutically effective amount of a DNA molecule comprising a constitutive promoter operatively linked to a region encoding a polypeptide having the ability to inhibit growth of a tumor cell, which coding region further is operatively linked to a transcription - terminating region, whereby said polypeptide is expressed; and

(b) exposing said cell to an effective dose of ionizing radiation, whereby the growth of said tumor is inhibited by said polypeptide and ionizing radiation.

36. (Previously presented) A method of assessing the response of a cell to the constitutive production of radiosensitizing or radioprotecting factors following ionizing radiation comprising:

(a) growing the cell in culture;

(b) transfecting the cell with a genetic construct comprising a nucleic acid that encodes the cell radiosensitizing factor or radioprotecting factor operatively linked to a constitutive promoter, whereby said nucleic acid is expressed to produce the radiosensitizing factor or radioprotecting factor;

(c) exposing the cell to an effective dose of ionizing radiation; and

(d) assessing the response of the cell.

37. (Previously presented) The pharmaceutical composition of claim 29, wherein the adenovirus particle contains a deletion of the E1 region and/or the E3 region of the adenoviral genome.

38. (Previously presented) A process of inhibiting growth of a tumor in a host comprising the steps of:

(a) injecting into the tumor a therapeutically effective amount of the pharmaceutical composition of claim 29, and

(b) administering to the host an effective dose of ionizing radiation, whereby the growth of the tumor is inhibited by expression of the nucleic acid encoding a TNF-α and the administration of ionizing radiation.

39. (Previously presented) The process of claim 38, wherein the amount

of the pharmaceutical composition is between 10^8 and 10^{11} plaque forming units.

40. (Currently amended) The process of claim 38, wherein the total dose of ionizing radiation is between 50 and 70 Gray.

41. (Previously presented) The process of claim 35, wherein the polypeptide is a TNF-α.

42. (Previously presented) The process of claim 12, wherein the cytokine is a TNF-α.